AMENDMETNS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-38 (Canceled)

39. (New) Process for the calcining of gypsum, comprising the stages of:

(i) supplying hot gases to the inlet of a first pipe;

(ii) supplying gypsum to the inlet of a second pipe concentric with the first pipe;

(iii) carrying the gypsum along in the second pipe via a force-feeding screw;

(iv) indirect heat exchange between the gypsum and the hot gases; and

(v) calcining the gypsum to plaster.

40. (New) Process according to Claim 39, wherein the gypsum is gypsum from flue gas desulphurization or natural gypsum or a mixture thereof.

41. (New) Process according to Claim 39, wherein the stages (iii) of carrying the gypsum along and (iv) of indirect heat exchange comprise drying of the gypsum.

42. (New) Process according to Claim 39, wherein the stages (iii) of carrying the gypsum along and (iv) of indirect heat exchange comprise drying and at least partially the calcining (v) of the gypsum to plaster.

43. (New) Process according to Claim 39, wherein the calcining (v) comprises bringing the gypsum into contact with the hot gases, the calcining being of the flash type.

44. (New) Process according to Claim 39, wherein the time between bringing the gypsum into contact and its complete calcining is less than 10 sec.

45. (New) Process according to Claim 39, wherein the calcining (v) comprises bringing the gypsum into contact with the hot gases, the calcining being carried out in a fluidized bed.

46. (New) Process according to Claim 39, wherein the calcining stage comprises transportation of the gypsum from the outlet of the second pipe by entrainment by hot gases.

47. (New) Process according to Claim 39, wherein the residence time of the gypsum or plaster or a mixture thereof in the second pipe is between 30 seconds and 5 minutes.

48. (New) Process according to Claim 39, wherein the stage of indirect heat exchange between the gypsum and the hot gases comprises the calcining stage.

49. (New) Process according to Claim 39, wherein the stages (iii) of carrying the gypsum along and (iv) of indirect heat exchange comprise the drying and at least partially the calcining (v) of the gypsum to plaster, the calcining (v) being completed by bringing the gypsum into contact with the hot gases, the completed calcining being of the flash type, the duration of the stages (iii) and (iv) being between 30 seconds and 5 minutes and the duration of the calcining by contact with the hot gases being between 1 and 10 seconds.

50. (New) Process according to Claim 49, the duration of the stages (iii) and (iv) being between 1 and 2 minutes and the duration of the calcining by contact with the hot gases being between 2 and 5 seconds.

51. (New) Process according to Claim 49, additionally comprising a stage (iiib) of milling the gypsum during the stage (iii) of carrying along.

52. (New) Process for the calcining of gypsum, comprising the stages of:

(i) supplying hot gases to the inlet of a first pipe;

(ii) supplying gypsum to the inlet of a second pipe concentric with the first pipe;

(iii) carrying the gypsum along in the second pipe via a force-feeding screw;

(iv) indirect heat exchange between the gypsum and the hot gases; and

(v) calcining the gypsum to plaster, by bringing the gypsum into contact with the hot gases, the calcining being of the flash type.

53. (New) Process according to Claim 52, wherein the time between bringing the gypsum into contact and its complete calcining is less than 10 sec.

54. (New) Process for the calcining of gypsum, comprising the stages of:

(i) supplying hot gases to the inlet of a first pipe;

(ii) supplying gypsum to the inlet of a second pipe concentric with the first pipe;

(iii) carrying the gypsum along in the second pipe via a force-feeding screw;

(iv) indirect heat exchange between the gypsum and the hot gases; and

(v) calcining the gypsum to plaster;

wherein the stages (iii) of carrying the gypsum along and (iv) of indirect heat exchange comprise the drying and at least partially the calcining (v) of the gypsum to plaster, the calcining (v) being completed by bringing the gypsum into contact with the hot gases, the completed calcining being of the flash type, the duration of the stages (iii) and (iv) being between 30 seconds and 5 minutes and the duration of the calcining by contact with the hot gases being between 1 and 10 seconds.

55. (New) Process according to Claim 54, the duration of the stages (iii) and (iv) being between 1 and 2 minutes and the duration of the calcining by contact with the hot gases being between 2 and 5 seconds.

56. (New) Gypsum dryer/calciner comprising:

- a calcining space;
- a first pipe exhibiting an inlet connected to a source of hot gases and an outlet emerging in the calcining space;
- a second pipe exhibiting an inlet connected to a source of gypsum and an outlet emerging in the calcining space, the second pipe being concentric with the first pipe;
- a force-feeding screw positioned at least partially in the second pipe, the said screw carrying the gypsum along in the calcining space.

57. (New) Dryer/calciner according to Claim 56, wherein the second pipe surrounds the first pipe over a portion of its length.

58. (New) Dryer/calciner according to Claim 56, wherein the second pipe surrounds the first pipe over substantially its length.

59. (New) Dryer/calciner according to Claim 56, wherein the calcining space corresponds to a receptacle at least partially surrounding the first pipe and the second pipe.

60. (New) Dryer/calciner according to Claim 59, wherein the calcining space is divided up between the inside of the second pipe and the receptacle.

61. (New) Dryer/calciner according to Claim 56, wherein the calcining space is at least partially coincident with the inside of the second pipe.

62. (New) Dryer/calciner according to Claim 61, wherein the calcining space is coincident with the inside of the second pipe.

63. (New) Dryer/calciner according to Claim 56, wherein the first pipe is emplaced so as to rotate with respect to the second pipe and drives the force-feeding screw integral with it.

64. (New) Dryer/calciner according to Claim 56, wherein the pitch of the screw varies along the length of the screw.

65. (New) Dryer/calciner according to Claim 56, wherein the screw exhibits a stirrer positioned at the end of the screw.

66. (New) Dryer/calciner according to Claim 65, wherein the force-feeding screw is guided in rotation by at least two centring arms integral with the stirrer.

67. (New) Dryer/calciner according to Claim 65, wherein the stirrer is equipped with a deflector facing the outlet of the first pipe.

68. (New) Dryer/calciner according to Claim 65, wherein the stirrer exhibits a shaft positioned at its end.

69. (New) Dryer/calciner according to Claim 65, wherein the stirrer is guided in rotation by bearings integral with the receptacle.

70. (New) Dryer/calciner according to Claim 56, wherein the first and second pipes are vertical.

71. (New) Dryer/calciner according to Claim 56, wherein the inlet of the second pipe exhibits a conical shape corresponding at least partially to the force-feeding screw.

72. (New) Dryer/calciner according to Claim 56, wherein the second pipe has a shape and structure appropriate for milling.

73. (New) Dryer/calciner according to Claim 56, wherein the force-feeding screw has a shape and structure appropriate for milling.

74. (New) Plaster, the characteristics of which are as follows:

(i) reactivity:

(a) knife initial set less than 6 minutes; or

(b) Gillmore setting between 4.5 and 6 min; or

(c) Vicat final set between 10 and 12 min; and

(ii) plaster/water ratio at saturation of at least 140 parts of plaster per 100 parts of water; and

(iii) fluidity as determined by a spreading value of greater than 205 mm.

75. (New) Plaster according to Claim 74, the characteristics of which are as follows:

(i) reactivity: knife initial set less than 5 minutes; and

(ii) plaster/water ratio at saturation of at least 140 parts of plaster per 100 parts of water; and

(iii) fluidity as determined by a spreading value of greater than 240 mm.

76. (New) Plaster according to Claim 74, the BET surface area of which is at least 8 m^2/g.

77. (New) Plaster according to Claim 74, which does not split in water.

78. (New) Plaster according to Claim 74, which is devoid of gypsum and/or of chlorinated adjuvant.

79. (New) Plaster according to Claim 74, wherein the knife initial set is less than 5 minutes.

80. (New) Plaster according to Claim 74, wherein the reactivity is:

(a) knife initial set less than 6 minutes;

(b) Gillmore setting between 4.5 and 6 min; and

(c) Vicat final set between 10 and 12 min.

81. (New) Plaster according to Claim 74, wherein the fluidity is greater than 240 mm.